



Amendment Under 37 C.F.R. § 1.111  
Serial No.: 09/744,801  
Sughrue Ref: Q62916

Claim 27 (previously presented): A carbon baking furnace according to claim 26 wherein said refractory lined kiln comprises a plurality of heating zones.

Claim 28 (currently amended): A carbon baking furnace according to claim 27 wherein said refractory lined kiln comprises a first heating zone for heating the green carbon ~~articles~~anode blocks to remove volatile organic compounds and a high temperature heating zone for baking the carbon ~~articles~~anode blocks.

Claim 29 (previously presented): A carbon baking furnace according to claim 28 wherein the high temperature zone comprises a plurality of heating zones.

Claim 30 (previously presented): A carbon baking furnace according to claim 26 wherein said baking path is substantially linear.

Claim 31 (currently amended): A carbon baking furnace according to claim 26 wherein the refractory lined kiln comprises guides to position the carbon ~~articles~~anode blocks within the baking path.

Claim 32 (previously presented): A carbon baking furnace according to claim 26 wherein said baking path is substantially vertical.

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Claim 33 (currently amended):      A carbon baking furnace according to claim 32 wherein the green carbon ~~articles~~ anode blocks are substantially continuously ~~loaded~~ placed into the kiln in the receiving zone by a conveyor and a hydraulic ram whereby the conveyor positions the green carbon ~~articles~~ anode blocks adjacent to the top of the substantially vertical baking path and the hydraulic ram positions the green carbon ~~articles~~ anode blocks into the top of the baking path.

Claim 34 (currently amended):      A carbon baking furnace according to claim 32 wherein the baked carbon ~~articles~~ anodes are substantially continuously discharged from the substantially vertical baking path in the discharge zone by a plurality of hydraulic rams and a conveyor whereby the bottom-most baked carbon ~~article~~ anode is supported by a hydraulic ram and the adjacent baked carbon ~~article~~ anode is engaged and supported by a pair of opposed rams while the bottom-most baked carbon ~~article~~ anode is positioned by the first mentioned hydraulic ram onto the conveyor.

Claim 35 (currently amended):      A carbon baking furnace according to claim 32 wherein the packed carbon ~~articles~~ anode blocks are substantially continuously displaced through the baking path under gravity.

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Claim 36 (currently amended): A carbon baking furnace according to claim 26 comprising a hopper for the sacrificial medium, the hopper being fitted with a nozzle for spreading the sacrificial medium over and around each green carbon ~~article~~anode blocks.

Claim 37 (previously presented): A carbon baking furnace according to claim 26 wherein said sacrificial medium is packing coke having a maximum particle size of less than 15mm.

Claim 38 (currently amended): A carbon baking furnace according to claim 26 comprising scrapers for removing the sacrificial medium from the baked carbon ~~articles~~anodes downstream of the kiln.

Claim 39 (currently amended): A process for baking carbon ~~articles~~anode blocks, said process comprising the steps of:

substantially continuously loading green carbon ~~articles~~anode blocks into a refractory lined kiln, said kiln defining a baking path through which plural carbon anode blocks are displaced from a first end to a second end as they are baked,

packing said green carbon ~~articles~~anode blocks in a sacrificial medium prior to displacing the packed carbon anode blocks through said baking path,

substantially continuously displacing the packed carbon ~~articles~~anode blocks through said baking path to form baked carbon ~~articles~~anodes, and

substantially continuously discharging the baked carbon ~~articles~~ anode blocks from the kiln at the second end of the baking path.

Claim 40 (currently amended): A process for baking carbon ~~articles~~ anode blocks according to claim 39 wherein the packed carbon ~~articles~~ anode blocks are displaced through the kiln at a uniform rate.

Claim 41 (currently amended): A process for baking carbon ~~articles~~ anode blocks according to claim 39 wherein the packed carbon ~~articles~~ anode blocks are displaced through the kiln at a step-wise rate.

Claim 42 (currently amended): A process for baking carbon ~~articles~~ anode blocks according to claim 39 wherein the refractory lined kiln operates at equilibrium temperatures.

Claim 43 (currently amended): A process for baking carbon ~~articles~~ anode blocks according to claim 39 wherein the green carbon ~~articles~~ anode blocks are heated in a first heating zone of the refractory-lined kiln to remove volatile organic compounds from the ~~articles~~ carbon anode blocks, and wherein the volatile organic compounds are extracted from the kiln.

Claim 44 (currently amended): A process for baking carbon ~~articles~~ anode blocks according to claim 39 wherein said baking path is substantially linear.

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Claim 45 (currently amended): A process for baking carbon ~~articles~~ anode blocks according to claim 39 wherein the packed carbon ~~articles~~ anode blocks are guided through the baking path by guides in the refractory lined kiln.

Claim 46 (currently amended): A process for baking carbon ~~articles~~ anode blocks according to claim 39 wherein said baking path is substantially vertical.

Claim 47 (currently amended): A process for baking carbon ~~articles~~ anode blocks according to claim 46 wherein the green carbon ~~articles~~ anode blocks are substantially continuously loaded into the kiln by a conveyor and a hydraulic ram whereby the conveyor positions the green carbon ~~articles~~ anode blocks adjacent to the top of the substantially vertical baking path and the hydraulic ram positions the green carbon ~~articles~~ anode blocks into the top of the baking path.

Claim 48 (currently amended): A process for baking carbon ~~articles~~ anode blocks according to claim 46 wherein the packed carbon ~~articles~~ anode blocks are substantially continuously displaced through the baking path under gravity.

Claim 49 (currently amended): A process for baking carbon ~~articles~~ anode blocks according to claim 46 wherein the rate at which the packed carbon ~~articles~~ anode blocks pass

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down the substantially vertical baking path is controlled by retarding or braking the movement of the lower or lowest baked carbon ~~articles~~ anode.

Claim 50 (currently amended): A process for baking carbon ~~articles~~ anode blocks according to claim 46 wherein the baked carbon ~~articles~~ anodes are substantially continuously discharged from the substantially vertical baking path by supporting the bottom-most baked carbon ~~article~~ anode with a hydraulic ram, engaging and supporting the adjacent baked carbon ~~article~~ anode with a pair of opposed rams, and using the first mentioned hydraulic ram to position the bottom-most baked carbon ~~article~~ anode onto a conveyor.

Claim 51 (currently amended): A process for baking carbon ~~articles~~ anode blocks according to claim 39 wherein the sacrificial medium is stored in a hopper fitted with a nozzle and is spread over and around the green carbon ~~articles~~ anode blocks by means of the nozzle.

Claim 52 (currently amended): A process for baking carbon ~~articles~~ anode blocks according to claim 39 wherein said sacrificial medium is packing coke having a maximum particle size of less than 15mm.

Claim 53 (currently amended): A process for baking carbon ~~articles~~ anode blocks according to claim 39 wherein the sacrificial medium that has been displaced through the baking

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path with the packed carbon ~~articles~~ anode blocks is separated from the baked carbon ~~articles~~ anodes downstream of the refractory lined kiln.

Claim 54 (currently amended): A process for baking carbon ~~articles~~ anode blocks according to claim 53 wherein the sacrificial medium is separated from the baked carbon ~~articles~~ anodes by means of scrapers.